A COMPARATIVE STUDY OF KIN ANTHROPOMETRIC AND PHYSICAL FITNESS VARIABLE BETWEEN RURAL AND URBAN VOLLEYBALL PLAYERS IN THESTATE OF TELANGANA

RESEARCH PROPOSAL

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1. INTRODUCTION

The game of volleyball requires talent and strategy. One skill is the ability to place the with the proper height, direction, and speed in the intended direction. It is a game that requires explosive strength, talent, and focus. The anaerobic energy system is heavily utilized in the game, while aerobic endurance is crucial for recovery in between points. Coaches and experts in physical education have been debating the significance of the various talents as key contributors to team success for many years. The forearm pass, the set, and the spike are listed as the three most crucial fundamentals.

Originally a recreational sport, volleyball has evolved into one that demands a high degree of fitness, skill efficiency, decent body, etc. Jump services, the addition of the Libero, and a variety of assault combinations are a few examples of contemporary volleyball game characteristics. The demands on technical execution of the game have increased significantly, which has had a significant impact on player performance. These demands include increased demands on motor fitness, skill, and body composition.

One of the most popular sports in the world, volleyball has a number of distinctive characteristics. The volleyball court's team six-a-side has twelve players. Players are required to play a variety of positions, and each position has a unique set of physical requirements. The main playing actions in a volleyball match can be categorized as serve, serve-reception, set, spike, block, and dig. A game of skill and tactics is volleyball. The ability to position the ball with the proper height, direction, and 8B speed is one skill. A team's performance capabilities and prospects are determined by extrinsic factors such as age, height, weight, body composition, and experience in addition to the game's technological and tactical performance. Volleyball is a highly technical team sport with intricate performance variations between players of different skill levels. Today, male athletes over 2.00 meters in height and female athletes over 1.70 meters in height are commonplace.

The study of humans in science is known as kinanthropometry. The most intelligent species in the animal kingdom, man has made his life creative, pleasant, and institutionalized by using his intelligence and talent. As a cultural institution, sports have served as a place for enjoyment,

employment, celebration, exercise, and fitness as well as for achieving bigger goals like competing in state, national, and international competitions and bringing honor to one's family, country, and self. Anthropologists have ventured to determine the impact it has on a sportsman's total performance as part of their endeavor to comprehend physiological functioning in the physical and sociocultural environments of mankind.

Kinanthropometry has emerged as a crucial tool in the hands of physical educators and sports scientists to investigate how athletes' body types and dimensions affect their performance. At its most fundamental, kinanthropometry involves identifying a sportsperson. Numerous kinanthropometry measurements and indices, as well as their effects on the execution of motor skills, have been thoroughly investigated. Sports kinanthropometry has thus evolved as a unique branch, serving as both a performance indicator and a parameter of specific diagnostic procedures. However, identification alone is insufficient. In order for specialized training to be beneficial in that direction, it is necessary to identify the specific area of sports, or specialization, where that person would suit best. This is conceivable if a thorough analysis of the concerned individuals' size, form, proportion, body composition, fat, muscle, and bone mass is done.

Kinanthropometry is a newly developed scientific technology that is quickly gaining significance. This field of study aims to evaluate a person's physical makeup in terms of their ability to perform gross motor functions. The bodily composition of individuals is accessed through kinanthropometic methods. The collection of systematic measurement methods known as kinanthropometry expresses quantitatively the dimensions of the human body in both the living and the dead. Kinanthropometry is frequently thought of as the conventional and probably fundamental technique of physical kinanthropology, but it has also been widely utilized in physical education and other sport sciences, and it is currently being employed more and more in the biomedical sciences. Kinanthropometry is a branch of science that deals with measuring people. Sports kinanthropometry is a branch of study that measures athletes while they are moving. The body measurements of athletes and players are taken using this method, which is the most specialized.

Mankind has always been interested in a fit body. From ancient times to the present, being physically fit has been linked to strength and survival. It was either fit or get punished for

primitive people. For survival, the first humans relied primarily on their own fortitude, vigor, and energy. They had to learn fundamental abilities like agility, balancing, sprinting, endurance, and climbing just to survive. Primitive physical activity and survival activity were intimately connected. In order to find food, clothing, shelter, and safety from a hostile environment, the people had to flee. They had to get ready to combat other human groups as well as animals.

During World War II, the word "fitness" gains popularity. Physical fitness can be characterized as a certain stage of motor ability that emphasizes the ability to perform demanding work. The qualities that have been chosen for emphasis are quickness, stamina, power, and agility. More specifically, physical fitness can be defined as the ability to accomplish simple tasks with ease in a range of conditions, such as running, jumping, dodging, falling, climbing, and swimming.

Physical fitness preparation of the sportsperson plays a crucial part in improving performance in sports and establishes a solid foundation for all other aspects of sports performance. A sportsperson's fitness is the culmination of their various motor skills, including their strength, speed, endurance, flexibility, agility, and coordination. The fundamental prerequisites for human motion are these motor skills and their complicated forms, such as strength endurance, speed endurance, explosive strength, etc. The word "physical fitness" refers to a person's entire dynamic physiological state. There are many different aspects of fitness, such as agility, speed, flexibility, and maintaining a healthy weight. The majority of sports, of course, depend to varied degrees on a number of fitness-related factors.

ANTHROPOMETRIC CHARACTERISTICS OF VOLLEYBALL PLAYERS

An anthropometric profile can be used to forecast a player's success based on their anthropometric traits. For years, sports trainers, exercise scientists, physical education teachers, and professionals in sport medicine have been interested in the anthropometric characteristics of athletes. Many of them made the assumption that active athletes might be expected to display structural and functional traits that are particularly advantageous for their sport. To determine the significance of anthropometric traits for success in competitive sports, knowledge of these traits is required.

Given the significance of motivation, peer status, and other non-physical factors, anthropometric factors influencing strength and motor performance are examined in terms of overall body size, body proportions, physique, and body composition. It should be remembered that performance and strength are connected, and that anthropometric parameters that affect performance and strength during development are also interrelated. The ideal leg and arm lengths enable a volleyball player to play with endurance throughout the match and successfully accomplish the actions involved in spiking, blocking, and serving with the least amount of energy expenditure. These anthropometrical differences between team members mechanically impact them and cause them to expend energy on unnecessary movements. The execution of talent and overall performance in sport are thus greatly influenced by the player's anthropometric functions.

Volleyball is one of the sports where the degree of performance is influenced by the anthropometrics of the players. It was determined that volleyball players, in contrast to the majority of other athletes, exhibit unique anthropomorphological traits. In other words, in addition to having high levels of technical and tactical ability, volleyball players also need to have the appropriate anthropometric traits. Since anthropometric features are almost entirely inherited, training cannot modify length and width measurements.

2. SIGNIFICANCEOFTHESTUDY

- Depending on the players' play positions, the results may help determine the critical Physical fitness and skills needed for volleyball players.
- The study may make it easier to understand how certain motor fitness, anthropometric measures, psychological, and skills characteristics relate to volleyball players' game performance.
- The outcome might tell coaches and physical education teachers on the determining elements needed for volleyball players.
- The study's conclusions are very helpful in creating and implementing exercise regimens for people who require such care.
- The results of this study may also show how aggression, physical fitness, mental toughness, and the specified anthropometric measurements affect how well allrounders, attackers, blockers, setters, and liberos perform.

3. OBJECTIVES OF THE STUDY

- To compare the winner and loser players at semi final stage of rural and urban College Volleyball Championship with respect to the Kinanthropometric variables
- To compare the winner and loser players at semi final stage of rural and urban College Volleyball Championship with respect to the physical fitness variables
- To compare the importance and predict the kinanthropometric, physical fitness, psychological and game skill variables on playing ability of Volleyball among players.

4. HYPOTHESES OF THE STUDY

1. The selected physical Fitness, Anthropometric, and Playing Ability of volleyball players who played in various play positions were anticipated to not differ significantly from one another.

2. There may not be a significant correlation between selected physical fitness and playing ability in volleyball players, according to the hypothesis.

3. There may not be a substantial correlation between certain anthropometric measurements and the playing ability of volleyball players, according to the hypothesis.

4. There may not be a substantial correlation between certain psychological characteristics and the playing ability of volleyball players, according to the hypothesis.

5. The playing ability of volleyball players could not be significantly predicted by physical fitness, anthropometric measures, or psychological factors.

5. REVIEWOFLITERATURE

Chyi et al. (2018) investigated the mediating/moderating effects of perceived stress on the connection between stress and burnout. The researcher evaluated the burnout, perceived stress, and life stress of 195 college student-athletes through a sample. All research variables were associated, according to correlation analysis. The "distress" component of perceived stress moderated athletes' relationships with two types of life stress and burnout, but the "counter-stress" component of perceived stress moderated athletes' relationships with general life stress

and burnout, according to two independent hierarchical regression analyses. The researcher came to the conclusion that it was difficult to connect the dots between athletes' life stress, perceived stress, and burnout.

Hackett (2018) looked at the vertical leap and medicine ball chest throw as indicators of adolescent athletes' muscular strength and power. Teenagers aged between 13 and 19 took part in the study. Vertical leap peak power was determined using an estimation equation during participant trials of the medicine ball chest throw and vertical jump. Pneumatic exercise equipment were used to measure the peak power and one-repetition maximum for the chest press and leg press. The vertical leap peak power substantially associated with the maximum and peak power of the leg press, whereas the medicine ball chest throw strongly connected with the maximum and peak power of the chest press. When controlled for sex, age, height, weight, and maturity, the predictive ability of the medicine ball chest throw was superior to the vertical jump peak power for muscular strength and power and was unaffected by participation in sports. The results indicate that the medicine ball chest throw is a good predictor of muscular strength and power in teenagers, although peak vertical jump power is less predicted when other characteristics are considered.

In sets with varying levels of opposition, Valhondo et al. (2018) identified the factors that predicted serve efficacy in elite men's volleyball. A total of 24 matches were played during the 2011 Men's European Volleyball Championships, and 3292 serve actions were examined, of which 2254 were performed in high-quality opposition sets and 1038 actions were performed in low-quality opposition sets. The serve zone, serve type, serving player, serve direction, reception zone, receiving player, and reception type were all taken into account as independent variables in this study. Serve efficacy was the dependent variable and opposition set quality was the situational variable. The serving player, receiving zone, and kind of reception all served as predictors in both high and low quality opposition sets. Only high quality opposition sets were predicted by the serve type variable, while only low quality opposition sets were predicted by the serve zone variable. These findings may offer crucial direction for men's volleyball training procedures.

In order to understand the beneficial relationship between coaches' psychological need-supportive behavior and team athletes' proactivity, Van Puyenbroeck, Stouten, and VandeBroek (2018) looked at the mediating effect of a mastery and performance motivational climate. The volleyball players in the study sample, who ranged in level from the highest national level in Belgium to the regional levels (Mage=21.92, SDage=4.92), were 75 male and 105 female players (Mage=21.92, SDage=4.92). They answered questions about the three main types of proactivity, the motivational climate, and the coach's need for support (voice, taking charge, and upward communication). An excellent fit for the proposed model was obtained using multilevel structural equation modeling. According to our hypotheses, proactivity was favorably predicted by need support (=0.72, P.001) and positively correlated with a mastery climate (=0.74, P.001). A performance climate was inversely associated with need-supportive coaching behavior (=0.39, P.001). In contrast to our hypothesis, proactivity was positively predicted by a performance atmosphere, but to a lesser extent than by a mastery climate (=0.21, P.001). These results imply that coaches can foster a mastery environment by using a need-supportive coaching style. Teams can more successfully address problems when there is a climate that encourages athletes to be proactive. Within the context of social interdependence theory, the weaker but still significant positive relationship between a performance climate and proactivity will be examined.

The relationship between specific physiological factors and volleyball playing skill among male intercollegiate volleyball players was studied by Sudhakara, G. (2018). Methodology: Forty (40) men's intercollegiate volleyball players were chosen as the study's subjects in order to fulfill its objectives. Data from the four physiological variables were collected during an intercollegiate tournament at Visvesvaraya Technological University. Vital capacity was measured using a dry spirometer, and pulse rate, systolic blood pressure, and diastolic blood pressure were measured using an Omron automatic blood pressure monitor MX3. During the intercollegiate competition, three experts evaluated each player's subjectively, and the average was used as the criterion score. Statistical Analysis: The relationship between a few physiological factors and volleyball playing skill among intercollegiate men's volleyball players was examined using the coefficient of correlation statistical technique. Results: The statistical analysis reveals a coefficient of association between a few physiological characteristics and male collegiate volleyball players' ability to play volleyball. Conclusion: The study's analysis showed that among male

intercollegiate volleyball players, selected physiological variables like diastolic blood pressure were significantly correlated with volleyball playing ability, while selected physiological variables like vital capacity, pulse rate, and systolic blood pressure were not significantly correlated with volleyball playing ability.

Sportspeople who compete in strength-related events typically have highly muscular bodies, according to research by Gasparini (2016) that looked at the role of physical and morphological characteristics like size, weight, and height in ball game players, including those who play volleyball, basketball, football, and handball.

Therefore, this can aid them in winning more competition. According to the findings, volleyball players were the tallest and heaviest athletes. According to this study, volleyball players have more muscle mass than the other two components. Additionally, it should be mentioned that the higher stature of volleyball and basketball players will result in greater success in their respective competitions due to the nature of the games.

Elite female volleyball players' anthropometric and physical performance profiles were examined by Mielgo-Ayuso et al. (2015) to identify any variations in these characteristics between various playing positions. Examining any connections between anthropometric measurements and performance measures was another goal. 42 female professional volleyball players were evaluated for this study. Middle blocks, opposite hitters (n=6), outside hitters, setters, and liberos were the categories used to group players by playing position. The following anthropometric parameters were evaluated: height, weight, fat mass, and muscle and bone mass. Additionally, jump tests (vertical-jump and spike-jump), speed, agility, and strength tests were among the physical performance metrics looked at (crunches test and overhead medicine ball throw). Liberos were the shortest (166.78.1 cm), whereas middle blockers were the highest (186.51.4 cm). The opposite hitters were the heaviest and the liberos were the lightest in terms of body mass among positions. In comparison to other positions, liberos had much smaller chest, mid-thigh, calf, and waist girths and musculoskeletal masses. The following were the major differences for skinfolds: Liberos setters for the mid-thigh, middle blockers setters for the calf, and opposite hitters setters for the abdomen. Finally, there were substantial positive associations between the mid-thigh and calf corrected girths and the jump tests.

The study by Palao et al. (2014) examines volleyball players' height, weight, age, spike reach, and block reach in connection to their location on the court and the level of peak performance of their respective teams. 1454 male and 1452 female volleyball players who competed in the Olympic Games and World Championships from 2000 to 2012 made up the studied sample. The design was descriptive, correlative, and longitudinal. The player position, body height, weight, BMI, spike reach, block reach, age, and team level were the variables examined. The findings highlight variations in body height, spike and block reaches, and player age according to position. These variations reflect the demands of the various positions with reference to the operations they carry out. The attributes best suited for blocking and spiking are those of middle blockers, outside hitters, and opposites, whereas setters and liberos tend to have traits best suited for setting and receiving as well as digging, respectively. The variations in the examined variables that were observed depending on the playing position are connected to the demands that players place on their actions. For male players, player age was a factor that distinguished first teams at this level of competition, and for female players, physical attributes (body height, weight, spike reach, and block reach) were factors.

Ajitha (2014) investigated the connection between physical fitness factors and intercollegiate women's volleyball players' spiking abilities. 40 women volleyball players at the collegiate level were chosen for the study, and their ages ranged from 19 to 28. Explosive power and flexibility were chosen as the variables. The findings of this study revealed a connection between the spiking abilities of female volleyball players and physical fitness characteristics including flexibility and leg explosive power. Assessing the anthropometric, motor fitness, and physiological data of senior male volleyball players from India, Abraham Samson (2012). The study's focus was restricted to senior male volleyball players from India who attended the Padmashree Dr. SivanthiAditanar Sports Centre for Excellence in Tiruchendur from 18 April to 25 August 2012. Selected anthropometric, motor fitness, and physiological traits of national senior volleyball players were chosen as study variables. With the level of significance set at 0.05 level of confidence, the subject data was statistically investigated using the Pearson product moment correlation coefficient and linear predictive models (step-wise argument selection). According to the study's findings, there is a significant correlation between the senior male volleyball players from India's national team's volleyball playing ability and the determinant

variables chosen for the study — height, weight, arm span, speed, agility, muscular endurance, forced vital capacity, and peak expiratory rate. The study's findings indicated that among Indian senior men volleyball players, shoulder muscular power and vertical jump were the most important predictors of playing skill.

For female volleyball players, Sindhu Devi (2013) investigated the connection between playing ability and motor fitness elements. To fulfill the goal of this study 30 female volleyball players ranging in age from 18 to 25 were chosen as subjects. The motor fitness factors, notably speed and agility, were chosen. Pearson product moment correlation was utilized to determine the relationship between the dependent and independent variables. According to the findings of this study, there is a substantial correlation between certain motor fitness traits, such as speed and agility, and playing prowess in female volleyball players.

Vinoth Kumar (2012) investigated how intercollegiate volleyball players' anthropometric measurements and motor fitness components related. Thirty male volleyball players who competed in intercollegiate competitions at ManonmaniamSundaranar University (MSU) in 2011 and 2012 were chosen as the study's subjects. The subject was between the ages of 18 and 28. The following variables were included in this analysis: anthropometric measurements of strength, explosive power, agility, and physical endurance as well as height, weight, leg length, and arm length. The Pearson product moment correlation coefficient and the Wherry-Doolittle multiple regression equation were both utilized to analyze the relationship between the chosen variables. As a result of this study, anthropometric factors like height and leg length as well as motor fitness factors like strength were crucial traits. Concluded that the intercollegiate volleyball players' height and strength were the best indicators of their ability to play the sport.

6. RESEARCH GAP

The proposed study attempts to find out the relationship of the physical fitness,anthropometrical, psychological and skill performance variables with Playing Ability ofVolleyball players. It is felt that there is a need for an analytical study in order todiscriminate the factors associated in predicting the success in

Volleyball.Moreover,verylittleresearchhadbeendoneonVolleyballplayers,whichmotivatedtheinvestigatorto takeup thestudy.

7. RESEARCH METHODOLOGY

Selection of subjects and variables, use of an experimental design and criteria measures, followed by a pilot study, reliability of data, instruments, tester and subject, data collection, and the statistical approach used have all been described in the methodology chapter.

SELECTION OF SUBJECTS

The goal of the study was to use a combination of kinanthropometric, motor fitness, and psychological and game skill characteristics to predict playing ability in NCAA volleyball players.

100 hundred men volleyball players competing at the intercollegiate level were chosen at random from various institutions throughout the Indian state ofTelangana. The subjects were chosen from the 18 to 25 age range. Winners and runners-up of the intercollegiate competitions held by the relevant university were the subjects chosen for the study.

SELECTION OF VARIABLES

The researcher spoke with experts in the fields of physical education and sports coaching and reviewed a variety of books, journals, websites, and research papers which revealed the significance of kinanthropometric components, motor fitness, psychological aspects, and game skills and playing ability for the overall development of intercollegiate level volleyball players. The playing ability was chosen as a criterion variable and the 48 predictor factors included in the following list were chosen with attention given to criteria, feasibility, the availability of testing procedures and equipment, and the relevance of the study's variables.

CRITERIONVARIABLE

PlayingabilityinVolleyball.

(Itisassessed byexpertsinVolleyball, duringthegameplayingsituation)

PredictorVariables

Kinanthropometricvariables.

- Todeterminebodysizedifference.
- Generalbodymeasurements:
- Bodyweight.
- Height.
- SittingHeight.

SkeletalDiameters:

- BiacromialDiameter(ShoulderWidth).
- BicristalDiameter(AbdominalWidth).
- Bitrochantricdiameter(Hipwidth).
- HumerusBicondylarwidth(Elbowwidth).
- Wristdiameter.
- FemurBicondylardiameter(Kneewidth).
- Anklediameter.

Circumference:

- Chestcircumference.
- Upper-Armcircumference.
- Fore-Armcircumference.
- Thighcircumference.
- Calfcircumference.

Skinfoldmeasurements:

- BicepsSkinfoldwidth.

- TricepsSkinfoldwidth.
- Fore-ArmSkinfoldwidth.
- SubscapularSkinfoldwidth.
- SuprailiacSkinfoldwidth.
- ThighSkinfoldwidth.
- CalfSkinfoldwidth.

Todeterminebodyforms(Somatotyping).

- Ectomorph.
- Endomorph.
- Mesomorph.
- MotorFitnessvariables.
- MuscularStrength.
- MuscularEndurance.
- Cardio-VascularEndurance.
- Flexibility
- BMI.
- Power.
- Speed.
- Agility.
- Balance.
- ReactionTime.
- Psychologicalvariables.
- Self-Awareness.
- Empathy.
- EffectiveCommunication.
- Interpersonalrelationships.
- CreativeThinking.
- CriticalThinking.
- DecisionMaking.

- ProblemSolving
- Copingwith Emotions.
- Copingwith Stress.
- Gameskillvariables.
- Service.
- Pass.
- Set.

EXPERIMENTAL DESIGN

A total of forty eight kinanthropometric, motor fitness, psychological, and game skill factors were chosen as the predictor variables using a random group sample experimental design with playing ability in volleyball as the criterion variable.

PILOT STUDY

Twenty players who were not research study subjects participated in a pilot study that the investigator conducted to determine testing methods and procedures, assess the investigator's skill in keeping track of timings and scores, and test the questionnaire and field equipment used in the investigation.

COLLECTION OF DATA

The methods used in administrative tests to gather information from college volleyball players on specific predictor variables, including kinanthropometric, motor fitness, psychological, and game skill variables, as well as subjective ratings used to determine playing ability.

STATISTICALANALYSIS

One-Way Analysis of Variance (ANOVA) was taken into consideration as a statistical approach to ascertain the significant differences between the group means of the criteria variables, which are play positions of volleyball players, including spiker, setter, blocker, attacker, and libero. Scheffe's post hoc test was used to compare ordered paired mean differences in the criteria

variables when the estimated "F" value by the ANOVA technique was determined to be significant.

Karl Pearson's Product Moment Coefficient of Correlation was chosen as the right technique to establish a substantial association between predictor/independent (motor fitness, anthropometric measures, and psychological characteristics) and criterion variable (playing skill). The present study further used multiple correlation and regression approach after obtaining relationships to find the significant predictors and to produce solutions for the regression equations of volleyball players' playing abilities. The level of significance for the confidence level was chosen at 0.05. SPSS (Statistical Package for Social Science) version 20.0 and Microsoft Excel 2015 were used to analyze the data.

8. CHAPTERIZATION

CHAPTER-1: INTRODUCTION

CHAPTER-2: REVIEW OF LITERATURE

CHAPTER-3: RESEARCH METHODOLOGY

CHAPTER-4: DATA INTERPRETATION AND ANALYSIS

CHAPTER-5: CONCLUSION AND SUGGESTION

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